DOCUMENT RESUME

ED 113 488 CE 005 005

AUTHOR Barrett, Gerald V.; Dambrot, Faye H.
TITLE Conference Report: Job Design, and Job Derived Employment Criteria. Technical Report No. 2.
INSTITUTION Akron Univ., Ohio. Dept. of Psychology.
SPONS AGENCY Office of Naval Research, Washington, D.C. Personnel and Training Research Programs Office.
REPORT NO TR-2
PUB DATE Mar 75
NOTE 18p.

EDRS PRICE MF-$0.76 HC-$1.58 Plus Postage
DESCRIPTORS *Employment Qualifications; *Job Analysis; *Military Service; *Research Design; Research Utilization; Task Analysis; *Technical Reports
IDENTIFIERS Job Design; Job Enrichment; Navy

ABSTRACT

The report is based on a working meeting (University of Akron, Akron, Ohio on November 13, 1974) of research contractors involved in job analyses, job design, and job derived employment criteria. The purpose of the meeting was to provide an informal exchange of research findings and designs among the participants, most of whom were engaged in research projects funded by the Office of Naval Research. The meeting included a consideration of task taxonomy, structured job analyses, task inventories, and the relevance of these methodologies to selection, training, and job design. Research results from field and experimental simulation studies were reported and discussed. A distribution list of names and addresses is included. (Author/EA)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

SEP 18 1975

CE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED113488

DEPARTMENT OF PSYCHOLOGY

THE
UNIVERSITY
OF
AKRON

THE UNIVERSITY OF AKRON
1870

CE005005

ED113488

TECHNICAL REPORT 2

CONFERENCE REPORT: JOB ANALYSES JOB DESIGN, AND JOB DERIVED EMPLOYMENT CRITERIA

GERALD V. BARRETT AND FAYE H. DAMBROT

DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF AKRON

ONR CONTRACT

NONR N00014-74-a-0202-000I, NR 151-351

MARCH 1975

This document has been approved for public release and sale; its distribution is unlimited.

Reproduction in whole or in part is permitted for any purpose of the United States Government.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Technical Report No. 2	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Conference Report: Job Analyses, Job Design and Job Derived Employment Criteria		5. TYPE OF REPORT & PERIOD COVERED Technical Report 6. PERFORMING ORG. REPORT NUMBER Technical Report #2
7. AUTHOR(s) Gerald V. Barrett Faye H. Dambrot		8. CONTRACT OR GRANT NUMBER(s) N00014-74-A-0202-0001
9. PERFORMING ORGANIZATION NAME AND ADDRESS Department of Psychology University of Akron Akron, Ohio 44325		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 61153N; RR 042-04; RR042-04-02 NR 151-351
11. CONTROLLING OFFICE NAME AND ADDRESS Personnel and Training Research Programs Office of Naval Research (Code 458) Arlington, VA 22217		12. REPORT DATE March 1, 1975 13. NUMBER OF PAGES 8
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Job Analyses, Job Derived Employment Criteria, Job Design, Task Taxonomy, and Job Enrichment.

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Report on a working meeting of research contractors involved in job analyses, job design and job derived employment criteria. The meeting included a consideration of task taxonomy, structured job analyses, task inventories, and the relevance of these methodologies to selection, training and job design. Research results from field and experimental simulation studies were reported and discussed.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-014-6601 |

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

INTRODUCTION

A working meeting of researchers in the area of job analyses, job design and job derived employment criteria was held at the University of Akron, Akron, Ohio, on November 13, 1974. The purpose of the meeting was an informal exchange of research findings and designs. Most of the participants were engaged in research projects funded by the Office of Naval Research. The meeting was chaired by Marshall Farr, Director of Personnel and Training Research Programs, Office of Naval Research.

MEETING PARTICIPANTS* AND ATTENDEES

Ralph Alexander
Department of Psychology
University of Akron
Akron, Ohio 44325

* Gerald V. Barrett
Department of Psychology
University of Akron
Akron, Ohio 44325

Bernard M. Bass
Graduate School of Management
University of Rochester
Rochester, New York 14627

Randall O. Comeau
Chief of Naval Education & Training Section
Naval Air Station
Pensacola, Florida 32508

Faye Dambrot
Department of Psychology
University of Akron
Akron, Ohio 44325

* Marshall J. Farr
Office of Naval Research
Personnel & Training Research Programs
Arlington, Virginia 22217

* Edwin A. Fleishman
American Institutes for Research
Washington, D.C.

Charles Hodges
Navy Personnel Research & Development Center
San Diego, California 92152

Robert G. Lord
Department of Psychology
University of Akron
Akron, Ohio 44325

Ronald E. Ludwig
Chief of Naval Education & Training Section
Naval Air Station
Pensacola, Florida 32508

* Ernest J. McCormick
Department of Psychological Services
Purdue University
West Lafayette, Indiana 47907

* Brian E. Moore
Department of Management
University of Texas
Austin, Texas 78712

* Arthur I. Siegel
Applied Psychological Services
Wayne, Pennsylvania 19087

* C. Harold Stone
California State University
Los Angeles, California 90032

Robert P. Thorpe
Navy Personnel Research & Development Center
San Diego, California 92152

* George R. Wheaton
American Insititutes for Research
Washington, D.C.

Joseph L. Young
Office of Naval Research
Personnel & Training Research Programs
Arlington, Virginia 22217

Proceedings (Abstracted)

1. ABILITY TASK TAXONOMY

Edwin Fleishman, from the American Institutes of Research, reviewed his extensive work in Task taxonomy. This involves classifying a variety of tasks by using a dual approach: the ability requirements of a task and task characteristics independent of the operator. The research program has extended from perceptual motor tasks to cognitive tasks to real world jobs. Fleishman stated that he now has some confidence that the ability taxonomy approach may have a broader relevance than other methodologies which attempt to analyze and classify tasks. The ability taxonomy when applied to the vigilance research literature has clarified relationships and results. Early research in this area has involved the prediction of performance from ability requirements as a function of learning and skill acquisition. It was reported that at different stages of learning, various abilities increase or decrease in importance.

Current research involves the systematic manipulation of task difficulty level and perceptual complexity or configuration characteristics to discover changes in ability requirements and individual differences in performance. George Wheaton described three studies involving an auditory perception task, electronic trouble shooting task and a concept identification task. Fleishman and Wheaton concluded that since task performance becomes more specific with training there is a need for more innovative predictors of performance. In this search, emphasis should be placed on the relationships between ability characteristics and task requirements.

2. STRUCTURED JOB ANALYSIS: POSITIONS ANALYSIS QUESTIONNAIRE (PAQ)

Ernest McCormick, of Purdue University, discussed the development, validation and applications of the Position Analysis Questionnaire (PAQ). This is a structured job analysis instrument that consists of over 180 job elements of a worker-oriented nature. Job dimensions were statistically derived from a principle components analyses of the PAQ based on 3700 jobs. The synthetic validity or what McCormick prefers to call "job component validity" was established by predicting from PAQ data, three criteria derived from the U.S. Training and Employment Service's General Aptitude Test Battery for 450 jobs. The results indicated better prediction of mean test scores than validity coefficients and better prediction of cognitive and perceptual abilities than motor or physical abilities.

Recent work involves establishing and predicting work compensation rates from PAQ data, and investigating the role of job characteristics, as measured by the PAQ as a source of variation in job satisfaction. McCormick concluded that the PAQ is an instrument which may be used to establish the aptitude requirements and compensation rates for jobs. Through this process, this instrument can eliminate the need for conventional test validation procedures and job evaluations. Instead one would proceed directly from quantitative job data to the areas of job aptitude and compensation.

3. EVALUATION OF A MARINE CORP. TASK ANALYSIS PROGRAM

C. Harold Stone, of California State University of Los Angeles, is beginning an evaluation of the Marine Corp. Task Analysis Program. This program, which has been in effect for approximately 5

years, involves teams of military analysts who prepare paper and pencil task inventories based on field observation, interviews and input of experts. The task analysis is based on the following phases (1) Study phase: review of job and training manuals, (2) Observation and interview phase, (3) Construction and preparation of task statements, (4) Processing or administration of task inventory, (5) Statistical analyses by CODAP technique to identify different jobs, (6) Preliminary report, (7) Final report which results in changes in military MOS's and changes in training. The program has resulted in cost savings in terms of training and material. C.H. Stone reported that his evaluation will encompass the following broad research questions and areas: (1) Process, methods and standardization of observation and interview techniques; (2) Method of task inventory construction including length of inventory, readability level, validity, and reliability; (3) optimal size of field sample; (4) Computer procedures and data analysis; (5) Organization of teams and personnel; (6) Relationship of peace time task analysis to war conditions; and (7) Role of worker characteristics in selection and classification.

4. A STATIC MULTI-ATTRIBUTE ASSIGNMENT (SMAAM)

Brian E. Moore, of the University of Texas at Austin, reported on the construction of a Task Inventory Index in support of a static multi-attribute assignment model (SMAAM). The model basically matches a personnel file and a job file to create the following three management reports: (1) the optimally assigned person, (2) every person by position and (3) every position by person. The

job file and personnel file are generated from the Task Inventory Index. The research sample involved a research and development organization and civil service blue collar craft jobs (e.g. electricians, welders, carpenters). The Task Inventory Index consisted of 300 task statements to which an incumbent responded with level of proficiency and the relative proportion of time spent at the stated task. The incumbent's ratings were vouchered against the superiors ratings. The task inventory was then hierarchically clustered by a CODAP program. The Task Inventory Index was used as a proficiency measure to construct the personnel file as well as the job file for SMAAM. Test-retest reliability of the inventory (4 months) was reported to average .75. The SMAAM model is not an additive but a matching model. It is based on the least deviations from goal requirements as specified by supervisors and all personnel who meet minimum requirements are included in the equation. SMAAM results in optimal selection for a given position.

5. APPLICATIONS OF JOB DERIVED EMPLOYMENT CRITERIA

Arthur Siegel, of Applied Psychological Services Incorporated, contrasted job analysis by multi-dimensional scaling and factor analysis with hierarchical cluster analysis. Siegel reported that there was good congruence across the two methods but that cluster analysis tended to over fragment and required a larger N. He then related job analysis to culture fair testing since this approach implies that tests should be based on job derived criteria. He reported on a study which involved black and white Naval enlisted men who had previously failed an entry screen test for a machinist

rating. After completion of a job analysis, these men were trained and tested in tasks which were samples of the actual machinist job. The study involved a nine-month and eighteen-month followup and the project was generally successful in selecting and placing men who had failed entry tests in higher level jobs. Siegel discussed the concept of differential validity and the need for culture fair work and training environments as well as culture fair testing. He is currently involved in a project with private industry to identify those workers who are eligible for promotion even though previous test battery results indicate they were not qualified for promotion. Siegel concluded his presentation with a discussion of Intellectual or Mental Load Analysis. This concept is based on Guilford's Intellectual model and involves the mental strain under which men perform jobs. Siegel discussed the implications of a mental load rather than abilities approach to job design.

6. FIELD AND LABORATORY STUDIES TO INCREASE INTRINSIC MOTIVATIONAL PROPERTIES OF NAVAL JOBS

Gerald V. Barrett, of the University of Akron, presented results from field studies and laboratory simulations of Naval monitoring and maintenance tasks. The conceptual framework of the research integrates the structural characteristics of the job, the individual's perception of job structure and individual attributes including general abilities, relevant skills, personal preferences, and value orientations resulting in an optimum combination of performance, satisfaction, and retention. Results from a field study of Naval monitoring and maintenance personnel indicated

that planned Naval service or retention is related to lower general ability scores, high job satisfaction, low complexity jobs, low extraversion and field-dependence. It was concluded that those Naval personnel with the highest aptitude for the job are least satisfied with the work itself and probably will leave the Navy.

Results were reported from laboratory simulations of monitoring tasks presented under conditions of high or low job enrichment. In general, it was found that subjects of high intellectual ability and field-independent cognitive style were more effective in performance but received less satisfaction from the task.

The second laboratory simulation involved a trouble shooting maintenance task presented under two experimental instructions: high enrichment and low enrichment instruction. The results indicated that subjects wasted less time between maintenance jobs with the high enrichment instruction.

DISTRIBUTION LIST

Navy

4 Dr. Marshall J. Farr, Director
Personnel and Training Research Programs
Office of Naval Research (Code 458)
Arlington, VA 22217

1 ONR Branch Office
495 Summer Street
Boston, MA 02210
ATTN: Research Psychologist

1 ONR Branch
1030 East Green Street
Pasadena, CA 91101
ATTN: E.E. Gloye

1 ONR Branch Office
536 South Clark Street
Chicago, IL 60605

1 Office of Naval Research
Area Office
207 West 24th Street
New York, NY 10011

6 Director
Naval Research Laboratory
Code 2627
Washington, DC 20390

12 Defense Documentation Center
Cameron Station, Building 5
5010 Duke Street
Alexandria, VA 22314

1 Special Assistant for Manpower
OASN (M&RA)
Pentagon, Room 4E794
Washington, DC 20350

1 LCDR Charles J. Theisen, Jr.
MSC, USN
4024
Naval Air Development Center
Warminster, PA 18974

1 Chief of Naval Reserve
Code 3055
New Orleans, LA 70146

1 Navy Personnel Research and Development Center
Code 9041
San Diego, CA 92152
ATTN: Dr. J.D. Fletcher

1 Dr. Lee Miller
Naval Air Systems Command
AIR-413E
Washington, DC 20361

1 CAPT John F. Riley, USN
Commanding Officer
U.S. Naval Amphibious School
Coronado, CA 92155

1 Chief
Bureau of Medicine & Surgery
Research Division (Code 713)
Washington, DC 20372

1 Chairman
Behavioral Science Department
Naval Command & Management Division
U.S. Naval Academy
Luce Hall
Annapolis, MD 21402

1 Chief of Naval Education & Training
Naval Air Station
Pensacola, FL 32508
ATTN: CAPT Bruce Stone, USN

1 Mr. Arnold Rubinstein
Naval Material Command (NAVMAT 03424)
Room 820, Crystal Plaza #6
Washington, DC 20360

1 Commanding Officer
Naval Medical Neuropsychiatric Research Unit
San Diego, CA 92152

1 Director, Navy Occupational Task Analysis Program (NOTAP)
Navy Personnel Program Support Activity
Building 1304, Bolling AFB
Washington, DC 20336

1 Dr. Richard J. Niehaus
Office of Civilian Manpower Management
Code 06A
Washington, DC 20390

1 Department of the Navy
Office of Civilian Manpower Management
Code 263
Washington, DC 20390

1 Chief of Naval Operations (OP-987E)
Department of the Navy
Washington, DC 20350

1 Superintendent
Naval Postgraduate School
Monterey, CA 93940
ATTN: Library (Code 2124)

1 Commander, Navy Recruiting Command
4015 Wilson Boulevard
Arlington, VA. 22203
ATTN: Code 015

1 Mr. George N. Graine
Naval Ship Systems Command
SHIPS 947012
Washington, DC 20362

1 Chief of Naval Technical Training
Naval Air Station Memphis (75)
Millington, TN 38054
ATTN: Dr. Norman J. Kerr

1 Dr. William L. Maloy
Principal Civilian Advisor for Education & Training
Naval Training Command,
Code 01A
Pensacola, FL 32508

1 Dr. Alfred F. Smode, Staff Consultant
Training Analysis & Evaluation Group
Naval Training Equipment Center
Code N-00T
Orlando, FL 32813

1 Dr. Hanns H. Wolff
Technical Director (Code N-2)
Naval Training Equipment Center
Orlando, FL 32813

1 Chief of Naval Training Support
Code N-21
Building 45
Naval Air Station
Pensacola, FL 32508

1 Navy Personnel R&D Center
San Diego, CA 92152

5 Navy Personnel R&D Center
San Diego, CA 92152
ATTN: Code 10

Army

1 Headquarters
U.S. Army Administration Center
Personnel Administration Combat
Development Activity
ATCP-HRO
Ft. Benjamin Harrison, IN 46249

1 Director of Research
U.S. Army Armor Human Research
Unit
Building 2422 Morade Street
Fort Knox, KY 40121
ATTN: Library

1 Commandant
United States Army Infantry School
Fort Benning, GA 31905
ATTN: ATSH-DET

1 Deputy Commander
U.S. Army Institute of
Administration
Fort Benjamin Harrison, IN 46216
ATTN: EA

1 Dr. Stanley L. Cohen
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 Dr. Ralph Dusek
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 Mr. Edmund F. Fuchs
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA

1 Dr. J.E. Uhlander, Technical
Director
U.S. Army Research Institute
1300 Wilson Boulevard
Arlington, VA 22209

1 HQ USAREUR & 7th Army
ODCSOPS
USAREUR Director of GED
APO New York 09403

Air Force

1 Research Branch
AF/DPMYAR
Randolph AFB, TX 78148

1 AFHRL/DOJN
Stop #63
Lackland AFB, TX 78236

1 Dr. Martin Rockway (AFHRL/TT)
Lowry AFB
Colorado 80230

1 Major P.J. DeLeo
Instructional Technology Branch
AF Human Resources Laboratory
Lowry AFB, CO 80230

1 AFOSR/NL
1400 Wilson Boulevard
Arlington, VA 22209

1 Commandant
USAF School of Aerospace Medicine
Aeromedical Library (SUL-4)
Brooks AFB, TX 78235

1 Dr. Sylvia R. Mayer (MCIT)
Headquarters Electronic Systems
Division
LG Hanscom Field
Bedford, MA 01730

1 AFHRL/PE
Stop #63
Lackland AFB, TX 78236

Marine Corps

1 Mr. E.A. Dover
Manpower Measurement Unit
(Code MPI)
Arlington Annex, Room 2413
Arlington, VA 20380

1 Commandant of the Marine Corps
Headquarters, U.S. Marine Corps
Code MPI-20
Washington, DC 20380

1 Director, Office of Manpower
Utilization
Headquarter, Marine Corps
(Code MPU)
MCB (Building 2009)
Quantico, VA 22134

1 Dr. A.L. Slafkosky
Scientific Advisor (Code RD-1)
Headquarters, U.S. Marine Corps
Washington, DC 20380

Coast Guard

1 Mr. Joseph J. Cowan, Chief
Psychological Research Branch
(G-P-1/62)
U.S. Coast Guard Headquarters
Washington, DC 20590

Other DOD

1 Lt. Col. Henry L. Taylor, USAF
Military Assistant for Human
Resources
OAD (E&LS) ODDR&E
Pentagon, Room 3D129
Washington, DC 20301

1 Dr. Harold F. O'Neil, Jr.
Advanced Research Projects Agency
Human Resources Research Office
1400 Wilson Boulevard Room 625
Arlington, VA 22209

1 Helga L. Yeich
Advanced Research Projects
Agency
Manpower Management Office
1400 Wilson Boulevard
Arlington, VA 22209

Other Government

1 Dr. Lorraine D. Eyde
Personnel Research and Development
Center
U.S. Civil Service Commission
1900 E. Street, N.W.
Washington, DC 20415

1 Dr. William Gorham, Director
Personnel Research and Development
Center
U.S. Civil Service Commission
1900 E. Street, N.W.
Washington, DC 20415

1 Dr. Vern Urry
Personnel Research and Development
Center
U.S. Civil Service Commission
1900 E. Street, N.W.
Washington, DC 20415

1 U.S. Civil Service Commission
Federal Office Bldg.
Chicago Regional Staff Div.
ATTN: C.S. Winiewicz
Regional Psychologist
230 So. Dearborn St.
Chicago, IL 60604

1 Dr. Richard Snow
Stanford University
School of Education
Stanford, CA 94305

1 Dr. Bernard M. Bass
University of Rochester
Management Research Center
Rochester, NY 14627

1 Mr. Kenneth M. Bromberg
Manager-Washington Operations
Information Concepts, Inc.
1701 North Fort Myer Drive
Arlington, VA 22209

1 Dr. Norman Cliff
University of Southern California
Department of Psychology
University Park
Los Angeles, CA 90007

1 Century Research Corporation
4113 Lee Highway
Arlington, VA 22207

1 Dr. Kenneth E. Clark
University of Rochester
College of Arts & Sciences
River Campus Station
Rochester, NY 14627

1 Dr. H. Peter Dachler
University of Maryland
Department of Psychology
College Park, MD 20742

1 Dr. Rene' V. Dawis
University of Minnesota
Department of Psychology
Minneapolis, MN 55455

1 Dr. Norman R. Dixon
Room 170
190 Lothrop Street
Pittsburgh, PA 15260

1 Dr. Robert Dubin
University of California
Graduate School of
Administration
Irvine, CA 92664

1 Dr. Marvin D. Dunnette
University of Minnesota
Department of Psychology
Minneapolis, MN 55455

1 ERIC
Processing and Reference Facility
4833 Rugby Avenue
Bethesda, MD 20014

1 Dr. Victor Fields
Montgomery College
Department of Psychology
Rockville, MD 20850

1 Dr. Edwin A. Fleishman
American Institutes for Research
Foxhall Square
3301 New Mexico Avenue, N.W.
Washington, DC 20016

1 Dr. Robert Vineberg
HumRRO Western Division
27857 Berwick Drive
Carmel, CA 93921

1 LC01 CRJ Lafleur, Director
Personnel Applied Research
National Defence HQ
Ottawa, Canada K1A OK 2

1 Dr. M.D. Havron
Human Sciences Research, Inc.
7710 Old Spring House Road
West Gate Industrial Park
McLean, VA 22101

1 HumRRO
Division No. 3
P.O. Box 5787
Presidio of Monterey, CA 93940

1 HumRRO
Division No. 4, Infantry
P.O. Box 2086
Fort Benning, GA 31905

1 HumRRO
Division No. 5, Air Defense
P.O. Box 6057
Fort Bliss, TX

1 HumRRO
Division No. 6, Library
P.O. Box 428
Fort Rucker, IL 36360

1 Dr. Lawrence B. Johnson
Lawrence Johnson & Associates, Inc.
200 S. Street, N.W., Suite 502
Washington, DC 20009

1 Dr. Ernest J. McCormick
Purdue University
Department of Psychological Sciences
Lafayette, IN 47907

1 Dr. Robert R. Mackie
Human Factors Research, Inc.
6780 Cortona Drive
Santa Barbara Research Park
Goleta, CA 93017

1 Mr. Edmond Marks
405 Old Main
Pennsylvania State University
University Park, PA 16802

1 Mr. Luigi Petrullo
2431 North Edgewood Street
Arlington, VA 22207

1 Dr. Diane M. Ramsey-Klee
R-K Research & System Design
3947 Ridgemont Drive
Malibu, CA 90265

1 Dr. Joseph W. Rigney
University of Southern California
Behavioral Technology Laboratories
3717 South Grand
Los Angeles, CA 90007

1 Dr. Leonard L. Rosenbaum, Chairman
Montgomery College
Department of Psychology
Rockville, MD 20850

1 Dr. George E. Rowland
Rowland and Company, Inc.
P.O. Box 61
Haddonfield, NJ 08033

1 Dr. Arthur I, Siegel
Applied Psychological Services
404 East Lancaster Avenue
Wayne, PA 19087

1 Dr. C. Harold Stone
1428 Virginia Avenue
Glendale, CA 91202

1 Dr. David J. Weiss
University of Minnesota
Department of Psychology
Minneapolis, MN 55455